

Table of Contents

	<u>Page</u>
25.0 PIPELINE APPURTENANCES	1
25.1 Introduction	1
25.2 Codes and Criteria	1
25.2.1 Codes.....	1
25.2.2 Criteria	1
25.3 Design Procedures	2
25.4 Figures and Tables	2

25.0 PIPELINE APPURTENANCES

25.1 INTRODUCTION

This section contains design criteria applicable to line and aerial markers for the gas pipeline project. Criteria are presented for siting and placement geometry of the markers.

25.2 CODES AND CRITERIA

25.2.1 Codes

- Code of Federal Regulations, Title 18 – Conservation of Power and Water Resources
- Code of Federal Regulations, Title 49 - Transportation, Part 192, Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards.
- Federal Right-of-Way Grant for the Alaska Natural Gas Transportation System Alaska Segment, Serial No. F-24538 (December 1, 1980), as such may be updated and/or amended from time to time.
- Federal Energy Regulatory Commission conditional certificate of public convenience and necessity, issued on December 16, 1977, as such is finalized

25.2.2 Criteria

25.2.2.1 Right-of-Way Line Markers (Warning Markers)

- Roads, foreign pipelines and navigable waterways crossed by the gas pipeline will have Right-of-Way Line Markers (See Figure 25-1) permanently installed indicating crossing locations.
- Right-of-Way Line Markers will also be installed at intervals along the length of the gas pipeline where necessary.
- Right-of-Way Line Markers will be designed for vertical placement.
- Right-of-way Boundary Markers may also be installed at locations where third-party activity could be reasonably anticipated.

25.2.2.2 Navigable-Waterway Line Warning Sign (See Figure 25-1)

- Navigable-Waterway Line Warning Signs will be designed for vertical placement on both banks and will be visible from the center of the waterway.

25.2.2.3 Pipeline Aerial Markers

- Pipeline Aerial Markers (See Figure 25-2) will be permanently installed at appropriate intervals along the length of the gas pipeline to indicate the distance, in miles, beginning from Milepost 0, the beginning of the transmission pipeline, at Prudhoe Bay.

- Pipeline Aerial Markers will be designed for placement which will make the markers readily viewed from either a ground position or from low flying aircraft.
- The mileage number panels will be designed at an angle so that snow will not accumulate on the panel.

25.2.2.4 Construction Appurtenances

- Criteria for temporary appurtenances required during construction will be specified in the "Construction Specifications".

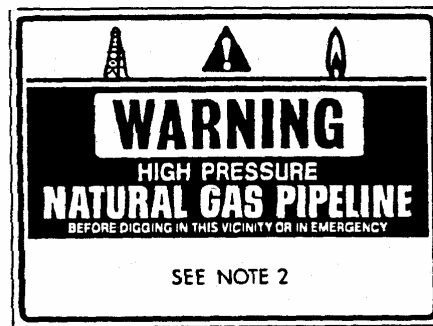
25.3 DESIGN PROCEDURES

- Right-of-Way Line Markers will consist of support members and signs. Emergency contact information and the words, "Warning, High Pressure Natural Gas Pipeline", will be shown on the signs.
- Navigable-Waterway crossing warning markers will consist of support members and signs. Emergency contact information and the words, "Warning; Do Not Anchor or Dredge, Natural Gas Pipeline Crossing" will be shown on the sign.
- Pipeline aerial markers will be of a distinctive shape and/or color that will be readily distinguishable from the markers of other pipelines.
- Support members will be designed so they will not frost-jack.

25.4 FIGURES AND TABLES

LIST OF FIGURES

<u>Figure No.</u>	<u>Figure</u>
25-1	Typical Warning Signs
25-2	Typical Pipeline Aerial Marker



**Right-of-Way
Line Markers**

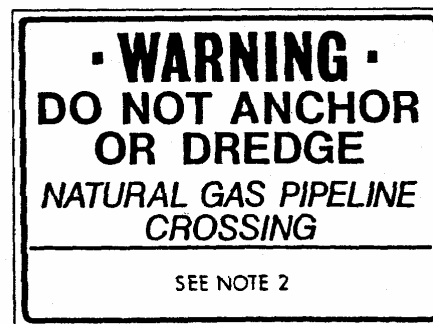


Figure 25-1 Typical Warning Signs

Notes:

- 1. Sign dimensions and colors will be as required considering visual sensitivities, code, and other agency specifications and company operating policy.*
- 2. This section to contain emergency contact information before installation.*
- 3. Graphics as shown are conceptual.*

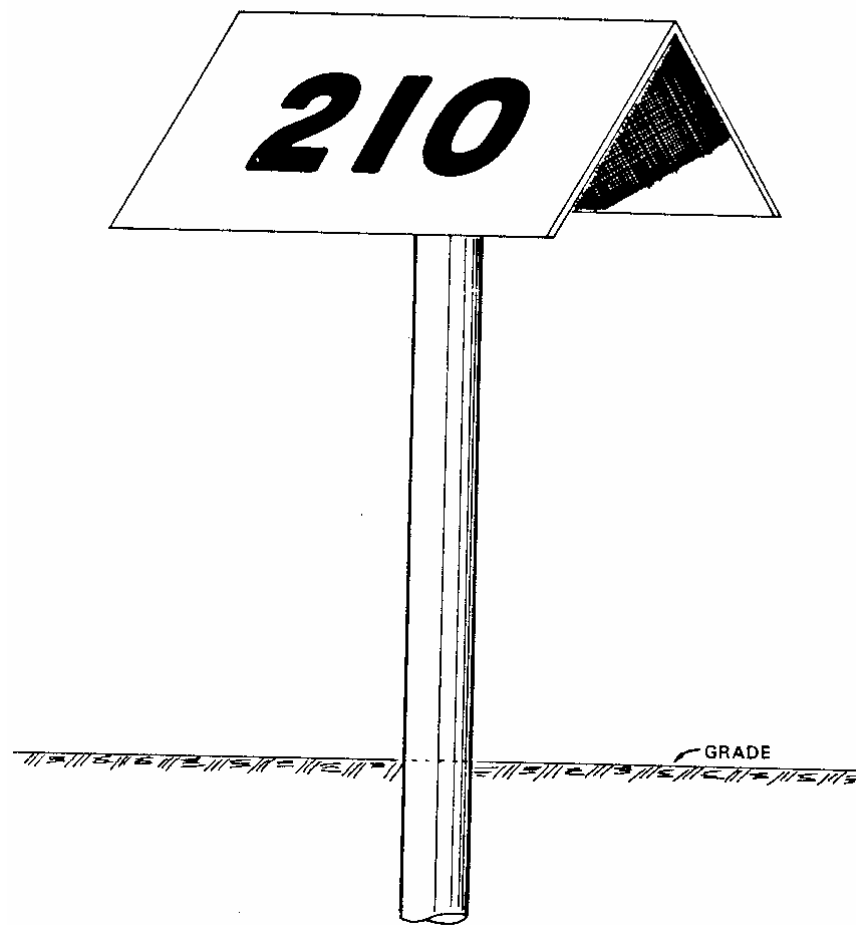


Figure 25-2 Typical Pipeline Aerial Marker

- Notes:*
- 1. Markers shall be located as directed, Number “210” shown for purpose of illustration.*
 - 2. Markers shall be designed to be readable horizontally and vertically and at an angle to prevent snow accumulation over numbers.*
 - 3. Markers shall be designed to prevent frost jacking.*
 - 4. Size and color will be determined by visual sensitivities and company operating policy.*